

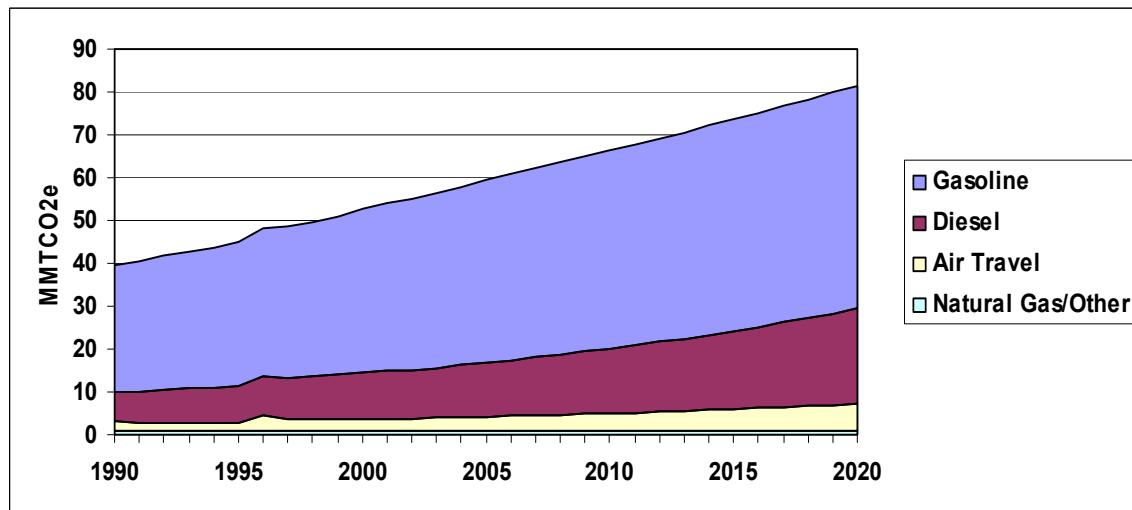
Transportation and Land Use

North Carolina needs a three-legged approach to controlling transportation GHG emissions

The transportation sector produces 29% of the State's gross GHG emissions. Transportation emissions are determined by 1) technologies, 2) fuels, and 3) activity rates—how much people drive, fly, etc. Activity rates, in turn, are determined in part by population, economic activity, and land use choices that affect the demand for transportation services.

Figure 1 shows historical and projected Transportation and Land Use (TLU) GHG emissions by fuel and source, and illustrates their rapid growth. TLU emissions are expected to more than double from 1990 to 2020. On-road vehicle miles traveled (VMT) are forecast to continue to grow faster than the population, and rapid growth in freight VMT is also expected. The high growth in transportation sector emissions means that to meet its GHG goals, North Carolina must work on all three contributors to emissions.

Figure 1. Historical and projected GHG emissions from the Transportation and Land Use Sector, North Carolina, 1990 to 2020



Key Recommendations

Thus, the CAPAG recommends three actions to reduce emissions from transportation:

1. North Carolina can and should cost-effectively **improve technology** to reduce GHG emissions per mile—particularly by adopting the California Clean Car standard.
2. North Carolina can and should **lower the GHG content of its fuel**.
3. North Carolina can and should **manage VMT**: increase travel options and plan for growth that reduces emissions. It can absorb its rapid growth in development patterns that will produce far less travel, and far lower emissions than forecast.

Transportation Mitigation Recommendations and Impacts

Within those three actions, the Climate Action Plan Advisory Group (CAPAG) recommends bundles that offer major economic benefits and emissions savings, as summarized in Table 1. These three bundles could reduce emissions 25.5 MMtCO₂e per year by 2020, and produce net cost savings of over \$4.3 billion to the North Carolina economy through the year 2020.¹

Table 5-1. CAPAG-recommended mitigation options and results for the Transportation and Land Use Sector

Option No.	Mitigation Option	GHG Reductions (MMtCO ₂ e)			Net Present Value 2008–2020 (Million \$)	Cost-Effective-ness (\$/tCO ₂ e)	Level of Support*
		2010	2020	Total 2008–2020			
1. Improve transportation technology							
TLU-5	Tailpipe GHG Standards (California Clean Car)	0	8.1	44.5	–1,690	–38	SMJ
TLU-8	Idle Reduction/Elimination Policies	0.1	0.2	2.2	–6	–4	UC
TLU-4	Truckstop Electrification	Included in TLU-8			Net savings		UC
TLU-9	Diesel Retrofits	0.3	2.2	13.5	Not quantified		UC
TLU-12	Advanced Technology Incentives	Not quantified					UC
2. Reduce GHG content of fuels							
TLU-6	Biofuels Bundle	1.9	4.5	35.4	Not quantified		UC
TLU-7	Procure Efficient Fleets	Included in TLU-6					UC
TLU-13	Buses – Clean Fuels	Included in TLU-6					UC
3. Manage VMT							
TLU-1a	Land Development Planning	2.6	8.0	58.2	Net savings		SMJ
TLU-1b	Multi-Modal Transportation and Promotion (formerly TLU-2)	3.7	5.8	52.4	–1,300	–25	UC
TLU-3a	Surcharges to Raise Revenue	1.2	2.2	15.7	–1,800	–117	SMJ
TLU-3b	Rebates/ “Feebates” to Change Fleet Mix	0	<0.5	2.8	Not quantified	–40 to +10	SMJ
TLU-11	Pay-As-You Drive Insurance	2.3	5.3	42.0	Expected net savings		SMJ
	SECTOR TOTAL AFTER ADJUSTING FOR OVERLAPS	11.1	25.5	232.3	–4,350	–19	

* UC = unanimous consent (all agree); SMJ = super majority (at least 80% or more agree). TLU-2 was renamed TLU-1b because of its linkage to TLU-1a. There is no mitigation option TLU-10, because this catalog option was not advanced by the CAPAG.

¹ The net cost savings are based on fuel expenditures, operations, maintenance, and administrative costs, and amortized, incremental equipment costs. All NPV analyses here use a 5% real discount rate.